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Kamen et al.(10) **Pub. No.: US 2021/0304864 A1**(43) **Pub. Date: Sep. 30, 2021**(54) **PERISTALTIC PUMP****Publication Classification**(71) Applicant: **DEKA Products Limited Partnership**,
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(63) Continuation of application No. 16/271,046, filed on Feb. 8, 2019, now Pat. No. 11,024,409, which is a continuation of application No. 15/841,961, filed on Dec. 14, 2017, now Pat. No. 10,202,971, which is a continuation of application No. 14/873,515, filed on Oct. 2, 2015, now Pat. No. 10,202,970, which is a continuation of application No. 13/725,790, filed on Dec. 21, 2012, now Pat. No. 9,677,555, which is a continuation-in-part of application No. 13/333,574, filed on Dec. 21, 2011, now Pat. No. 10,453,157, which is a continuation-in-part of application No. PCT/US11/66588, filed on Dec. 21, 2011, said application No. 14/873,515 is a continuation-in-part of application No. 13/723,238, filed on Dec. 21, 2012, now Pat. No. 9,759,369, which is a continuation-in-part of application No. 13/723,235, filed on Dec. 21, 2012, now Pat. No. 9,400,873, which is a continuation-in-part of application No. 13/724,568, filed on Dec. 21, 2012, now Pat. No. 9,295,778, which is a continuation-in-part of application No. 13/723,239, filed on Dec. 21, 2012, now Pat. No. 10,108,785, which is a continuation-in-part of application No. 13/723,242, filed on Dec. 21, 2012, now Pat. No. 10,911,515, which is a continuation-in-part of application No. 13/723,244, filed on Dec. 21, 2012, now Pat. No. 9,151,646, which is a continuation-in-part of application No. 13/723,251, filed on Dec. 21, 2012, now Pat. No. 9,636,455, which is a continuation-in-part of application No. 13/723,253, filed on Dec. 21, 2012.

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(57)

ABSTRACT

A peristaltic pump having at least first, second, and third stages is provided. The peristaltic pump includes a plunger, inlet and outlet valves, a spring, and an actuator. The plunger actuates toward and away from a tube, the inlet valve is upstream of the plunger, the outlet valve is downstream of the plunger, the spring biases the plunger toward the tube, and the actuator mechanically engages and disengages from the plunger. In the first stage, the inlet valve is opened and the plunger is actuated from the tube, in the second stage, the inlet valve is closed, the plunger is actuated toward the tube, and the actuator is mechanically disengaged from the plunger, and in the third stage, the outlet valve is opened. In the third stage or in a fourth stage, the actuator actuates the plunger toward the tube to discharge fluid downstream past the outlet valve.

